(a) providing a lighter fluid comprising between approximately 25 percent weight and approximately 40 percent weight of terpene, between approximately 30 percent weight and approximately 50 percent weight of C1-C3 alcohol, between approximately 20 percent weight and approximately 30 percent weight of water, between approximately 0.4 percent weight and approximately 2 percent weight of non-ionic surfactant, and between approximately 3 percent weight and approximately 6 percent weight of polyacrylic acid thickening agent;

(b) agitating said lighter fluid to form a clear emulsion;

(c) applying said lighter fluid to a bed of charcoals associated with said barbecue;

(d) igniting said lighter fluid;

(e) allowing said lighter fluid to undergo substantially complete combustion.

II. REMARKS

Claims 1-22 were examined and are pending in this application.

1. Objections to the Specification

The Examiner objected to Applicant's specification for failing to provide proper antecedent basis for the claimed subject matter (37 CFR §1.75(d)(1)). Specifically, the Examiner stated that there is no support for in the specification for the limitations of claim 19, the proportions of claims 20 and 21 and the limitation (e) of claim 21. The Examiner further stated that the limitations of these claims should inserted in an appropriate place in the specification.

The Applicant has amended the specification at page 6 lines 15-20 to more accurately reflect the percent weight ranges recited in claims 19-21. Particularly, the amended language of the specification supports the recitations of "between approximately 20 weight percent and approximately 40 weight percent" of terpene, "between approximately 30 weight percent and approximately 40 weight percent"

The limitation (e) of claim 21 noted by the Examiner is present at page 28 lines 3-5 of Applicant's specification, which relates that the "lighter fluid is allowed to undergo compete or substantially complete combustion ...". The Applicant believes that this language provides antecedent basis for element (e) of claim 21.

2. Claim Rejections Under 35 USC §112, Second Paragraph.

Claims 10, 16, 19 and 21 were rejected under 35 USC §112 second paragraph with regard to the recited term "short", which the Examiner stated is a relative term and has no comparative value. The Applicant has amended these claims to replace "short chain" with C1-C3. Support for this amendment is found at p. 5 lines 8-14 and p. 11 lines 15-20. The Applicant notes that it is common in the art to describe alcohols in terms of carbon chain length, and persons skilled in the art understand the term "C1-C3 alcohols" as referring alcohols having a hydrocarbon moiety containing one to three carbon atoms, i.e., methanol, ethanol and propanol. The Applicant believes that claims 10, 16, 19 and 21 as amended more particularly recite the subject matter of Applicant's invention and conform to the requirements of 35 USC §112 second paragraph.

3. Claim Rejections Under 35 USC §103

The Examiner rejected claims 1-22 as being unpatentable over Wilkins '107 in view of Wesley '706. The Examiner stated in particular that Wilkins teaches a lighter fluid composition comprising of from about 15 to about 30 weight % of a terpene, from about 40 to about 70% of an alcohol, from about 10 to about 30 weight % water and from about 1 to 2% surfactant. The Examiner noted that Wilkins does not specifically teach a lighter fluid containing a thickener, but that Wesley teaches the use of cross-linked polyacrylic thickening agents, and that it would have been obvious to one of ordinary skill in the art to add a thickener to Wilkins because of the teachings of Wesley.

An important deficiency in lighter fluids used for cooking is the persistence of a residual

problem by providing a lighter fluid that is prepared as an emulsion (p. 12 line 18 – p. 13 line 1, p. 14 lines 13-20, p. 19 lines 3-6), p. 20 lines 1-3) and used in emulsion form. A thickener or thickening agent

is used to stabilize the emulsion and prevent the composition from penetrating into charcoal, thus avoiding residual hydrocarbon that can impart unwanted taste to cooked foods.

> "The thickener further helps prevent the composition from penetrating into barbecue charcoals prior to ignition, which allows the composition to completely burn off during combustion and avoids the formation of residual, unburned hydrocarbon material which can result in undesirable odor and flavor in the barbecue-cooked food" (p. 14 lines 15-20).
>
> "[T]he use of a thickening agent in accordance with the invention helps the composition to completely burn off during combustion by preventing the composition from penetrating into the charcoal during and after application of the lighter fluid composition" (p. 25 lines 4-14).

Wilkins teaches a lighter fluid that is a "clear, single phase homogeneous fluid mixture" (col. 4 lines 19-20, col. 5 lines 2-6, 43-45, 51-53, 60-61 and 67-68), and not an emulsion as in Applicant's invention. Wilkins also teaches that the lighter fluid is "pre-soaked" into charcoal prior use so that the lighter fluid does not need to be added at the time of ignition.

> "The pre-soaked solid fuel is then stored in a sealed container... . The pre-soaked fuel may then, at any time within the shelf life of the material, be used". (col. 4 lines 42-54).

Wilkins does not address or mention the problem of hydrocarbon residue effect on taste and smell of barbecue-cooked food, which is solved by the thickener-stabilized composition of Applicant's invention. In fact, Wilkins expressly teaches away from Applicant's invention by teaching the pre-soaking of lighter fluid into solid fuel in a conventional manner. Allowing penetration of the lighter fluid in the manner taught by Wilkins results in hydrocarbon residue that affects the taste and smell of cooked food, which is avoided by Applicant's invention as noted above.

Wesley et al. discloses gelled organic fuel and solvent compositions, including gelled alcohols. Much of the Wesley et al. disclosure is directed towards compositions with specific rheological properties which allow gelled fuels to be classified as solids and subject to less rigorous regulations for

There is no teaching or suggestion in Wesley et al. to use a cross-linked polyacrylic acid or any other polymer to stabilize and thicken an emulsion so that it will not penetrate into charcoal. In Applicant's lighter fluid composition, the fuel and water phases separate upon storage and must be re-agitated to return to emulsion form prior to use (p. 18 lines 4-8, p. 19 lines 3-6 and p. 20 lines 1-3). The amount of water present in Applicant's lighter fluid compositions would not allow formation of a stable gel as taught by Wesley et al.

The Examiner also stated that Wilkins teach alcohols that are homologous to the claimed ethanol and methanol. The Applicant respectfully disagrees. MPEP §2144.09 notes that a prima facie case of obviousness may be made when chemical compounds have very close chemical structural similarities and similar utilities. The longer chain alcohols (col. 3 lines 4-12) of Wilkins are not structural isomers of ethanol and methanol, and in fact have substantially higher hydrocarbon content, and have lower water solubility and higher vapor pressures than methanol and ethanol. These differences affect the ability to form water-based emulsions as well as the ignition conditions for lighter fluids. The Applicant thus respectfully believes that the longer chain alcohols of Wilkins are not homologs of the recited ethanol and methanol.

In summary, the stated purpose of Wilkins et al. is to provide a lighter fluid that can be pre-soaked into charcoal, while Applicant's invention is formulated to prevent such soaking into charcoal. The use of a thickener as recited in Applicant's claims results in a composition that does not penetrate into charcoal, and thus allows complete burning of the composition to prevent residual taste and/or odor in barbecue-cooked food. Persons of skill in the art would not be motivated to combine the use of a thickener as taught in the gel compositions of Wesley et al. with the lighter fluid of Wilkins to develop a lighter fluid with properties from which Wilkins teaches away, i.e., a lighter fluid that cannot effectively be pre-soaked into charcoal. Accordingly, the Applicant believes that pending claims 1-22, which each recite a composition or related method for lighter fluids having a thickener so that the lighter fluids will not soak into charcoal, are patentably distinct from the combined teachings of Wilkins and Weslely et al.

III. CONCLUSION

For the reasons set forth above, the Applicant believes that each of the presently pending claims recites patentable subject matter and is in condition for allowance. Accordingly, the Applicant respectfully requests that the outstanding claim rejections and objections be withdrawn, and that this case be passed to issuance.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number STEP 001.

Respectfully submitted,
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Date: 06/21/02

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

(at p. 7 lines 1-9)

--More preferably, the lighter fluid composition of the invention comprises between approximately 20 or 30 weight percent and approximately 35 or 40 weight percent of terpene or terpenoid, between approximately 30 weight percent and approximately 40 or 50 weight percent of short chain alcohol, between approximately 20 weight percent and approximately 30 weight percent of water, between approximately 0.1 weight percent and approximately 2 weight percent of surfactant, and between approximately 2 weight percent and approximately 6 weight percent of thickening agent.--

IN THE CLAIMS

10. (Amended) A lighter fluid composition, comprising:

(a) between approximately 10 percent weight and approximately 45 percent weight of terpene;

(b) between approximately 20 percent weight and approximately 70 percent weight of [short chain] C1-C3 alcohol;

(c) between approximately 10 percent weight and approximately 40 percent weight of water;

(d) between approximately 0.3 percent weight and approximately 5 percent weight of surfactant; and

(e) between approximately 2 percent weight and approximately 8 percent weight of thickening agent.

16 (Amended) The lighter fluid composition of claim 10, wherein said [short chain] C1-C3

19 (Amended) A barbecue lighter fluid composition, comprising:

(a) between approximately 25 percent weight and approximately 40 percent weight of citrus-derived terpene;

(b) between approximately 30 percent weight and approximately 50 percent weight of [short chain] C1-C3 alcohol;

(c) between approximately 20 percent weight and approximately 30 percent weight of water;

(d) between approximately 0.4 percent weight and approximately 2 percent weight of non-ionic surfactant; and

(e) between approximately 3 percent weight and approximately 6 percent weight of polyacrylic acid thickening agent.

21. (Amended) A method for igniting a barbecue in preparation for cooking food thereon, comprising:

(a) providing a lighter fluid comprising between approximately 25 percent weight and approximately 40 percent weight of terpene, between approximately 30 percent weight and approximately 50 percent weight of [short chain] C1-C3 alcohol, between approximately 20 percent weight and approximately 30 percent weight of water, between approximately 0.4 percent weight and approximately 2 percent weight of non-ionic surfactant, and between approximately 3 percent weight and approximately 6 percent weight of polyacrylic acid thickening agent;

(b) agitating said lighter fluid to form a clear emulsion;

(c) applying said lighter fluid to a bed of charcoals associated with said barbecue;

(d) igniting said lighter fluid;

(e) allowing said lighter fluid to undergo substantially complete combustion.